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ABSTRACT

A project designed to demonstrate the effect of an adaptation of the microteaching technique on the instructional behavior of rural school teachers was conducted in three rural school systems in Tennessee, Georgia, and Florida. Fifty-one teachers and 1,114 pupils participated. Teachers were pre-rated by a 5-member rating team utilizing the Stanford Teacher Competence Appraisal Guide and the Ryans' Classroom Observation Record. Each teacher assessed his own attitude using the Minnesota Teacher Attitude Inventory. Teacher performance was recorded on videotape, which was utilized for suggesting improvements. Following a 12-week "laboratory teaching period," teachers were again rated and self-assessed. A second videotape was made. The statistical techniques utilized in this study were linear correlation analysis, variance analysis, and canonical correlation analysis. It is concluded that a rural school teacher's opportunity to see and hear his performance in the classroom by means of videotape has a highly significant improvement effect on his instructional behavior. The variables of sex of teacher, level of teaching (elementary or secondary), and years of teaching experience make no significant difference in improvement of classroom teaching performance gained through methods utilized in this project.

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FINAL REPORT
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A DEMONSTRATION OF THE EFFECT OF AN ADAPTATION OF MICROTEACHING ON THE INSTRUCTIONAL BEHAVIOR OF RURAL SCHOOL TEACHERS

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J.E.C.

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SUMMARY

The Project

This was a project designed to demonstrate the effect of an adaptation of the microteaching technique on the instructional behavior of rural school teachers. An adaptation of the microteaching technique was used rather than the originally conceived microteaching plan in order to provide a non-studio arrangement of instructional activities and thus to capture the natural atmosphere of a realistic classroom.

The Objectives

The major objectives of the project were these:

1. To ascertain whether or not the opportunity for rural teachers to observe, analyze, and evaluate their teaching behavior (as recorded on videotape) has any relationship to a change in these teachers' instructional performance;

2. To identify the nature of this change in instructional performance in terms of (a) general teaching competence, (b) pupil-teacher interaction behavior, and (c) teacher attitude.

Questions Raised for Investigation

More specifically, the project attempted to secure answers to such questions as:

1. Will rural school teachers, when convinced that they are participating in an in-service education program, initiated and operated in a supportive professional environment where security risks are diminished, engage in such a program willingly and enthusiastically?

2. Does the rural school teacher's opportunity to see and hear his performance in the classroom, as presented on videotape, have an effect on his classroom instructional behavior?

3. Does a sequential analysis of the teacher's videotaped instructional performance begun with his own personal analysis and culminated in an analysis by a team of his peers, provide an atmosphere conducive to the teacher's professional growth?

4. Are there area differences, geographically speaking, when three rural centers in three different states participate in a microteaching project focusing primarily on videotaping of classroom teaching performance?

5. Are the variables of sex (male and female teachers), levels of teaching (elementary and secondary), teaching experience (5 years or less, or more than 5 years), related to the effect which a microteaching experience such as this project affords may have on instructional behavior?

Procedures

Three rural school systems (Overton County, Tennessee; Wheeler County, Georgia; Wewahitchka, Florida) served as centers for this project. Fifty-one teachers (17 from each rural center) and 1,114 pupils participated in the project.

Each of the 51 teachers was pre-rated by each person of a five-member rating team (one rating team for each center) as the teacher taught an adaptation of a micro-lesson (about 25 minutes) to an adaptation of a micro-class (about 23 pupils). The rating instruments used were The Stanford Teacher Competence Appraisal Guide and The Ryans' Classroom Observation Record. It was at this time that each of the 51 teachers assessed his own teacher attitude using as the instrument of assessment the Minnesota Teacher Attitude Inventory.

Following the ratings by the five-member rating team and the teachers' assessment of their own teaching attitude, each of the 51 teachers recorded on videotape what he considered his best teaching performance. This videotape was then observed and discussed by the teacher, a trusted colleague, and the members of his rating team in that order.

Based on suggestions for improvement, each teacher in the project then engaged in a 12-week "laboratory teaching period." At the end of this "laboratory teaching period," each teacher was post-rated in an actual classroom teaching performance in the same manner in which he was pre-rated. It was also at this time that the teacher made a second videotape of what he considered a best teaching performance. Each teacher also post-assessed his teaching attitude in the same manner in which he pre-rated it.

In addition to the above described pre- and post-ratings of actual classroom teaching performance, pre- and post-ratings of thirteen randomly selected tapes (five from each of two rural centers and three from the third) were made in Atlanta, Georgia by a five member special team of raters.

Methodology Utilized in Analyzing and Interpreting the Data

The statistical techniques utilized in determining change from pre- to post-ratings in all pre- and post-rated areas were linear correlation analysis, variance analysis, and canonical correlation analysis.

Results

Rater Reliability (Actual Classroom Teacher Performance). Rater reliability for rural centers A and B was high and significantly greater than zero. In rural center C raters did not reach significant agreement.

Rater Reliability (Videotapes). The five raters reached significant agreement on all rating instruments.

Correlations Among Rating Instruments. There were significant correlations between the Stanford TCAG and the Ryans' COR (Pupil and Teacher Behavior) in pre- and post-ratings of both actual classroom teaching performance and videotapes of teaching performance. There was a significant correlation between the Minnesota TAI and the Stanford TCAG only in the post-videotape ratings. However, in the post-videotape ratings the Minnesota TAI did approach significance with the Ryans' COR (Pupil and Teacher Behavior).

Comparison of Ratings of Actual and Videotape Teaching Performance. There were no significant differences in the pre-ratings of actual and videotape teaching performance. In the post-ratings, actual classroom teaching raters rated Ryans' COR (Pupil Behavior), Ryans' COR (Teacher Behavior), and Stanford TCAG (teaching competence) significantly higher than did raters of videotapes of teaching performance.

Changes in Instructional Behavior as Determined by Pre- and Post-Ratings of Teaching Performance. There were significant indications of improvement in each of the three centers as measured by pre- and post-ratings of both actual classroom teaching performance and videotapes of teaching performance. However, the degree of this significance differed in the centers as follows:

Actual Classroom Teaching Performance (Rural Center Differences).

- Ryans' COR-Pupil Behavior: Rural Center A had a significantly higher improvement than rural Center B. There were no other significant rural center differences.

- Ryans' COR-Teacher Behavior: Rural Center A had significantly higher improvement than Rural Center B. There were no other significant rural center differences.

- Stanford TAI-Teacher Competence: Rural Centers A and C both had significantly higher improvement than Rural Center B.

Videotapes of Actual Classroom Teaching Performance Rural Center Differences. There were no significant rural center differences in the measures of improvement as reflected in the videotapes.

Changes in Teacher Attitude as Determined by Pre- and Post-Teacher Assessments. There was a highly significant indication of improvement in teacher attitude as measured by pre- and post-teacher assessments.

Relationship of the Variables of Sex of Teachers, Level of Teaching Position, and Length of Service to Improvement of Teaching Performance. There was no significant difference, as determining by twelve "t" computations, in any of the variables in the amount these variables affected improvement in teaching performance.

Canonical Correlation Analysis. This analysis suggests that some of the ratings of pupil reaction behavior improved a great deal while others improved very little. On the other hand, it was indicated through this analysis that the improvement in ratings of teacher interaction behavior and teacher competence behavior occurred relatively uniformly for all teachers.

Conclusions

A rural school teacher's opportunities to see and hear his performance in the classroom, as presented on videotape in such an arrangement as this project provided, has a highly significant improvement effect on this teacher's instructional behavior.

The variables of sex of teacher, level of teaching (elementary or secondary), and years of teaching experience (five years or less - more than five years) make no significant difference in the improvement of classroom teaching performance gained through a microteaching involvement such as the one utilized in this project.

For rural school systems, the utilization of some appropiate form of microteaching using videotape may be at least a partial solution to the problems these school districts experience in their efforts to improve teaching performance because of geographical isolation, limited funds, lack of adequate instructional supervisory personnel, and at times poorly qualified teachers. For if rural school teachers can be motivated through a microteaching experience or some adaptation of it, the terrific salary burden imposed on a rural school system in the employment of instructional supervisory personnel to aid teachers in professional growth can be diminished.

Recommendation

Microteaching, or some adaptation of it, when used in connection with videotaping has some yet unexplored ways in which it might be effectively utilized. For instance, school system employment officials could be supplied with videotapes of prospective teachers as they were involved in a laboratory teaching experience. This could furnish these school employment officials some knowledge about prospective teachers which written and oral correspondence, interviews, and personal recommendations can not provide. It is therefore recommended that some project or study be undertaken which would provide evidence as to the feasibility of utilizing microteaching in this wise.

CHAPTER I

ORIENTATION TO THE PROJECT

The Project

This was a project designed to determine the effect of an adaptation of the microteaching technique on the instructional performance of rural school teachers.

Microteaching, conceived and developed at Stanford University, is an instructional arrangement which in its original conception and operation included the following five components:

1. An instructional methodology which identified one specific aspect of teaching behavior -- such as stimulus variation, set induction, closure, etc. -- and focused on improving this specific teaching skill;
2. A micro-lesson -- usually four to eight minutes in length;
3. A micro-class -- customarily four to six pupils;
4. Student teachers in a "teacher preparation" context;
5. A videotape recording and playback.

Recently the microteaching concept and operation has expanded its participating population to include teachers in service.

The adaptation of microteaching utilized in this project differed from the original idea and operation of microteaching in the following ways:

1. Instead of employing only one specific aspect of instructional behavior, three general areas of teaching performance were utilized -- general teaching competence, pupil-teacher interaction behavior, and teacher attitude.
2. Instead of a class ranging four to eight minutes, an instructional time period of approximately 25 minutes was used.

3. Instead of a class of four to six pupils, the average class size in this project was 23 pupils.

4. Teachers in service rather than student teachers represented the microteaching instructors in this project.

An adaptation of the microteaching technique was utilized in this project rather than an exact duplication of microteaching as originally conceived in order to provide a non-studio arrangement of instructional activities and thus to capture the natural atmosphere of a realistic classroom.

It is generally agreed that there are a number of positive features inherent in an instructional approach such as microteaching.[1] One feature is the facility for controlling instructional situations and arrangements. A second is the opportunity for immediate feedback whereby the teacher can actually observe himself teaching and evaluate himself immediately after his instructional performance, not later on when specific elements of the teaching process have been forgotten or only faintly remembered. A third positive feature is the definiteness with which specific aspects of the teaching process can be observed, identified, and discussed by the teacher and his colleagues, while both are observing the teacher's instructional performance. A fourth feature is the relatively low cost for building into the school program a well-planned, efficiently operated microteaching arrangement.

The Rationale

Probably no other component of the educational process has a greater pervasiveness than that of improving the performance of classroom teachers. For many years educators have been profoundly concerned with in-service education programs and have continually sought more effective and efficient ways for improving teachers "on the job." Recent developments in educational technology have resulted in some inventive and innovative approaches to aiding teachers in service to improve themselves. Particularly exciting have been those related to the utilization of videotape in improving classroom instruction and the contributions of the microteaching technique.

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[1] Thomas B. Goodkind, An Evaluation of the Effectiveness of The Microteaching Technique in the Training of Elementary School Teachers. A paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Illinois, February 7-10, 1968, p. 1.

A project focusing on an adaptation of microteaching is doubly significant in terms of rural teachers. First of all, most of the microteaching programs have been designed for student teachers. Very few have been arranged to include teachers in service. Second, practically all of the previously conducted microteaching projects (limited, as indicated, mostly to student teacher populations) are further restricted to student teachers preparing to be employed in urban and suburban school districts.

The problem generated by the general lack of appropriate programs for improving the instructional performance of rural school teachers in service is compounded by the tendency of teachers to prefer working in urban centers. This usually results in teachers either turning down offers to teach in rural areas or using a year or two teaching in rural areas as a basis for gaining experience for transfer to urban school districts. Thus the need for "improving what you have" and providing worthwhile teaching climates is more incumbent upon rural school systems than upon urban areas where the "bright light", "big city" attractions are incentives for teachers to work in these areas.

The paucity of appropriate programs for improving the instructional performance of rural teachers, particularly those programs which utilize some form of microteaching and videotaping, points up the importance of projects such as the one herein described.

The Objectives

The major objectives of this project were these:

1. To ascertain whether or not the opportunity for rural teachers to observe, analyze, and evaluate their teaching behavior (as recorded on videotape) has any relationship to a change in these teachers' instructional performance;

2. To identify the nature of this change in instructional performance in terms of (a) general teaching competence, (b) pupil-teacher interaction behavior, and (c) teacher attitude.

Supplementing the major objectives of the project were the following three related purposes:

1. To assist teachers in developing an increased insight into the learning process;

2. To aid teachers in developing effective means of instructional self-analysis;

3. To make available on a local, state, and national basis a bank of model videotapes of teaching performance developed in this project.

The Assumptions

There are a number of assumptions undergirding this project. Among them are the following:

1. There is a need to demonstrate that in a professionally supportive environment where security risks are diminished school teachers are desirous of becoming autonomous improvers of their own teaching performance and are willing to participate in in-service education activities related thereto.

2. There is a need to demonstrate that a "look-see-listen" experience with his performance in the classroom, as presented on videotape, will increase the rural school teacher's comprehension of his instructional strengths and weaknesses and make him more aware of the need to modify certain of his behavioral patterns in the classroom.

3. There is need to demonstrate that a constructive analysis of his videotaped teaching performance in which observation and discussion of videotapes are conducted in the sequential pattern of (1) the teacher involved, (2) the teacher and a trusted colleague, and (3) a team of professional peers provides a positive climate for professional growth.

4. There is a need to demonstrate the effectiveness of a low-cost, well-planned, effectively operated adaptation of a microteaching program in schools in rural areas.

Questions Raised for Investigation

It was the plan of this project to secure evidence to support appropriate answers to such questions as these:

1. Will rural school teachers when convinced that they are participating in an in-service education program initiated and operated in a supportive professional

environment where security risks are diminished, engage in such a program willingly and enthusiastically?

2. Does the rural school teacher's opportunity to see and hear his performance in the classroom, as presented on videotape, have an effect on his classroom instructional behavior?

3. Does a sequential analysis of the teachers videotaped instructional performance begun with his own personal analysis and culminated in an analysis by a team of his peers, provide an atmosphere conducive to the teacher's professional growth?

4. Are there area differences, geographically speaking, when three rural centers in three different states participate in a microteaching project focusing primarily on videotaping of classroom teaching performance?

5. Are the variables of sex (male and female teachers), levels of teaching (elementary and secondary), teaching experience (5 years or less, or more than 5 years), related to the effect which a microteaching experience such as this project affords may have on instructional behavior?

The questions listed above were merely indicative of the type of information this project proposed to secure. They by no means exhausted the possibility or the probability of at least partial answers to many related inquiries which arose in the course of this project's operation.

The Location

Three rural school systems served as sites for this project. These were Overton County in Tennessee, Wewahitchka (Gulf County) in Florida, and Wheeler County in Georgia. Each of these three school systems is also the site of a five-year Rural Education Improvement Project, one of the main thrusts of which is the improvement of teaching performance.[2]

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[2] See Appendix B for a brief description of this Rural Education Improvement Project and Appendix C for demographic data about the three rural centers.

The Participating Teachers and Pupils

Fifty-one classroom teachers (17 from each of the three rural centers) and approximately 1,114 pupils participated in this project.

Sex Distribution of Participating Teachers. Of the 51 teachers in the project, 42 or 82 percent, were females, and 9, or 18 percent were males.

Levels of Teaching Distribution. There was almost perfect balance in the number of elementary and secondary teachers participating in the project. Of the 51 participating teachers, 26 or 51 percent, were secondary school pedagogues while 25, or 49 percent, taught at the elementary school level.

Length of Teaching Service. Two general categories of length of teaching were utilized -- teachers who had taught five years or less and teachers who had taught more than five years. Of the 51 participating teachers, 23, or 45 percent, had taught five years or less, and 28, or 55 percent, had been teaching for periods longer than five years.

Table I portrays the rural center distributions of teachers participating in this project in terms of sex of teachers, levels of teaching, and length of teaching service.

Sponsoring Agency

The Education Improvement Project -- an action arm of the Southern Association of Colleges and Schools, Atlanta, Georgia -- was the sponsoring agency for this project.

Financial Support

The major financial support for the operation of this project was provided by a grant of $9,478.50 from the Small Grants Division of the Regional Research Program, U. S. Office of Education, Atlanta, Georgia.

The Jessie Smith Noyes Foundation of New York City had previously made available a $9,000 grant to purchase the special equipment necessary for this project.

TABLE I

Teachers Participating in the Project

Rural Center	Distribution By Sex			Distribution By Levels of Teaching			Distribution By Length of Teaching Service		
	M	F	Total	Sec.	Elem.	Total	Less than 5 Years	5 Years Or More	Total
Overton County, Tennessee	5	12	17	9	8	17	8	9	17
Wewahitchka, Florida	3	14	17	8	9	17	10	7	17
Wheeler County, Georgia	1	16	17	9	8	17	5	12	17
Total	9	42	51	26	25	51	23	28	51

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Microteaching or some adaptation of it, is gaining status as a technique for improving instructional methodology. A survey of the literature in the field (1) points up the value inherent in a focus on the improvement of teaching performance in any school improvement project, and (2) identifies a number of programs geared in some manner to microteaching and videotape feedback.

Literature Relevant to Inherent Values in Improvement of Teaching Performance

The need for the improvement of teaching performance is attested to by the fact that small or rural school projects similar to the one reported include a special emphasis on in-service education for personnel. In the Catskill Area Project[3] it was specifically pointed out that "to enrich learning possibilities for young people, first enrich opportunities for their teachers." Emphasizing that "teachers teach as teachers grow," the report concluded that "the exploration, development, and adaptation which have spelled enrichment for their pupils would have been impossible without teachers willing and able to blaze new trails."

Jesser and Larson[4] stress the importance of the improvement of teaching performance when they state that a vital element in their educational improvement program has been the focus on "acquainting both teachers and administrators of the small schools with emerging technological media, existing educational media, and emerging concepts of instruction, etc."

In the five urban and three rural improvement programs being conducted under the sponsorship of the Education Improvement Project of the Southern Association of Colleges and Schools, an intervention common to all of them is the teacher education component which is geared to (1) the psychological nature of the teaching function, with special reference to the cognitive and affective developments of the learner, (2) the sociological foundations which underlie effective teaching and learning, and (3) the respective curriculum areas.[5]

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[3] Small School Design in Practice. The Catskill Area Project, Oneonta, New York.

[4] David L. Jesser and Burnell Larson, Annual Report to the Policy Board and The Ford Foundation Re: Western States Small Schools Project in Nevada. September, 1966.

Literature Relevant to Programs Related to Microteaching and Videotape Feedback

Microteaching's rapid progress towards acceptance as an effective technique for the improvement of teaching performance is indicated by the increasing number of reported studies, investigations, and projects related to microteaching and videotape feedback.

The developers of the microteaching technique indicate that it serves two major purposes. It may be utilized in a diagnostic sense to analyze specific problems related to curriculum development. It may also be used in an evaluative sense to rate the teacher's total performance through the immediate student feedback and supervisor's technique.[6]

Allen and Ryan[7] point out that the term microteaching was first coined in 1963, but the concept has never been a static one. It continues to grow and change and develop both in focus and format. Allen and Ryan go on to say that microteaching is intuitively appealing as a way of providing practice in teaching. It may also be regarded as a convenient research locus which dramatically simplifies the logistics of investigating certain teaching skills and other learning variables.

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[5] Report of Teacher Education Programs of Three Rural Education Improvement Projects, 1966-1967. Education Improvement Project Staff, Southern Association of Colleges and Schools, Atlanta, Georgia, September, 1967.

[6] Proceedings, Ford Foundation Conference, San Francisco, California, January 3-7, 1967.

[7] Dwight Allen and Kevin Ryan. Microteaching. Addison-Wesley Publishing Company, Inc., Reading, Massachusetts, 1969. (Preface).

Young[8] studied the effectiveness of self-instruction in teacher education using modeling and videotape feedback. The main purpose of the study was to appraise the relative effectiveness of various modes of training intern teachers in specific skills without direct supervision. The study was conducted in a "regular classroom" context during the fall quarter, 1967 in forty public schools in the San Francisco Bay area. The results of the study indicated that the combination of viewing (1) a "specific illustration" model, (2) a "complete" model with a contingent focus was significantly more effective than other combinations for the variable, such as: (1) teacher and student examples, (2) visual highlighting (total), and (3) writing on the chalkboard.

In his investigation of the effectiveness of microteaching in the preparation of elementary intern teachers, Kallenbach[9] randomly divided into two groups all of the teaching candidates in the 1967 San Jose State College's summer elementary intern teaching program. One group, the microteaching group, participated in a summer microteaching program on campus with no off-campus contacts with students. The other group, the student teaching group, participated in a limited observation and student teaching program. Both groups otherwise had the same summer program. The results of this investigation indicated no significant differences in teaching skills or competence between the groups. However, it was concluded that the major contribution of microteaching as compared with summer student teaching in an intern program was the time saved in teaching activities by the microteaching program -- over eighty percent in this study.

The effectiveness of the microteaching technique in the training of elementary school teachers was evaluated by Goodkind.[10] He selected forty student teachers in the University of Connecticut program. Twenty of these students were involved in microteaching with videotaping, and twenty without the videotaping. Each group taught two short lessons of 4-8 minutes and two long lessons of 10-20 minutes to the elementary children in the student teaching class. The experimental group had their performance recorded on videotape for playback and evaluation with their university supervisors and cooperating teachers. The control group students had similar evaluation sessions, but without the addition of the videotape recordings. All students had the chance to reteach the same lesson after the evaluation session, followed by a second lesson. Preliminary evaluation of the data indicated that the experimental group displayed (1) a greater awareness of specific personal habits and mannerisms, (2) a greater awareness of specific teaching acts and techniques particularly of the non-verbal type, (3) a greater insight into the activity and inter-relationships of children within the classroom, and (4) a greater awareness of the problems of pacing in their instructional program.

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[8] David B. Young, The Effectiveness of Self-Instruction in Teacher Education Using Modeling and Videotape Feedback. Paper presented at the Annual Meeting of the American Education Research Association, Chicago, Illinois, February 7-10, 1968.

[9] Warren Kallenbach, "The Effectiveness of Micro-Teaching in the Preparation of Elementary Intern Teachers," A.E.R.A. Paper Abstracts, American Educational Research Association, Washington, D. C., 1968. p. 105.

[10] Thomas B. Goodkind, op. cit., pp. 1-7.

That microteaching and interaction analysis when combined in a teacher education program provide a way for a teacher to change his classroom behavior was the conclusion of Mims[11] in his study of microteaching and interaction analysis at the Davis Branch of the University of California.

In an attempt to determine the effect of videotape recording feedback on the teaching behavior of teachers, Voth[12] discovered the following:

1. The type of video recording feedback in his investigation resulted in a significant increase in variableness of verbal interaction.

2. Where at least 3 to 4 hours of structured feedback per hour of recording were obtained, there was a significant increase in (a) "thoughtful answers" by pupils, (b) "indirect teacher influence," and (c) two general categories of unclassified verbal interaction.

3. There was no significant increase in cognitive responses or group discussion roles.

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[11] Douglas L. Mims, Micro-Teaching and Interaction Analysis in a Teacher Education Curriculum. Paper presented at Annual Meeting of American Educational Research Association, February 7-10, 1968. Chicago, Illinois.

[12] John A Voth, "Effect of Video Tape Recording on Teaching of Student Teachers" A.E.R.A. Paper Abstract, American Educational Research Association, Washington, D. C., 1968. p. 107.

The St. Cloud public school system initiated a pilot project which was concerned with the problem of influencing teacher behavior, which is one phase of the larger need of improving instruction. Specifically the project was directed towards the use of videotape as:

1. A means of more effectively presenting and viewing teacher demonstrations;
2. A technique which would provide the classroom teacher with a means of observing his or her own teaching behavior for the purpose of self-analysis.

A report of the first six months' operation of the project, designed primarily for in-service education of teachers, indicated that the project was more innovative than originally conceived and pointed up two things in particular.

1. The enthusiasm of the cooperating colleges converted splended cooperation into a full partnership.
2. The St. Cloud School System faculty and administration responded to the project well beyond expectations.[13]

The Jefferson County, Colorado school system is an example of how microteaching can be shaped to the needs of the professional staff in a school district. As Allen and Ryan[14] indicate, although this program has no formal microteaching clinic with schedules and set curriculum, microteaching is going on all the time. Teams of teachers and individual teachers "order up" microteaching to their own specifications. The teachers decide which skills to work on, the length of the lessons, and the number and grade level of the pupils. What it really amounts to is that the teachers construct microteaching experiences that aid them in working on problems they have identified.

During the summer of 1968, Dusable High School, one of the oldest secondary school establishments in Chicago, conducted the microteaching phase of the Ford Training and Placement Project.

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[13] The Use of Video Tape in In-Service Training for the Purpose of Improving Teaching. Board of Education, Independent School District Number 742, St. Cloud, Minnesota, 1967. pp. 1-13.

[14] Dwight Allen and Kevin Ryan. op. cit., pp. 83-86.

This was a joint project sponsored by the Chicago school system and the University of Chicago. The Dusable microteaching project had the following three main objectives:

(1) To train teachers in specific teaching skills;

(2) To provide the cadre members with training in helping one another improve their instructional skills;

(3) To provide all the participants with some insight into the teaching process as the teacher perceives it.

The forty participants in the program spent six weeks of a summer working in three teams, each team in the process of forming a cadre of faculty and staff at a Chicago school the following September.

Although the Dusable microteaching clinic was fraught with many problems and difficulties, the participants agreed that the clinic not only resulted in improvement in their teaching and supervisory skills, but also increased their ability to cope with life in the urban public school.

Since 1965 the Orange, California Unified School District has been exploring various methods of teacher in-service education programs which involved the classroom utilization of video equipment to record the instructional behavior of classroom teachers. The results of the Orange, California Teacher Self-Appraisal Program in 1967-1968 indicated that the use of video equipment as a part of teacher in-service education activities did assist teachers in modifying their behavior and did increase student achievement.[15]

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[15] "Teacher Self Appraisal In-Service Program: 1968-1969," Abstract, EPIC Evaluation Center, Tuscon, Arizona, 1969. p. 1.

CHAPTER III

PROCEDURES

The Operational Design

The time span for this project was eight months starting February 1, 1969 and ending September 30, 1969. Following are 1) a Sequential Design Chart, 2) a Description of Involvement Sequence which depict and delineate the detailed activities of the project, and 3) a List of Special Equipment Necessary for the Project.

1. Sequential Design Chart

Time Period	Sequence of Involvement[16]
First Two Weeks of Project	Planning, preparation and orientation period - Identified project teachers and pupils - Located microteaching stations - Planned teaching units and recording sessions - Trained technicians - Acquainted members of microteaching team and members of special team for observing and rating videotaped instructional performance of project teachers with proper use of rating instruments.
Third Week of Project	Period in which pre-ratings were made of the project teachers' actual classroom instructional performance prior to "microteaching treatment." (Ratings by members of microteaching team).

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[16] See Description of Involvement Sequence for a more detailed explanation of project activities.

Fourth Week of Project	First "microteaching treatment" period - Sequential teaching, recording, and reviewing sessions - Discussion Pre-rating -- rating of first "approved" videotaped teaching performance. (Ratings by members of special team for observing and rating videotaped instructional performance).
Next Twelve Weeks of Project	The "laboratory" "teaching" period - Project teachers implemented best teaching practices as per first "microteaching treatment" period.
Seventeenth Week of Project	Second "microteaching treatment" period - Sequential teaching, recording, and reviewing sessions - Discussion Post-rating -- rating of second "approved" videotaped teaching performance. (Ratings by members of special team for observing and rating videotaped instructional performance of project teachers).
Eighteenth Week of Project	Period in which post-ratings were made of teachers' actual classroom instructional performance following sequence of "first microteaching treatment" - "laboratory teaching treatment" - "second microteaching treatment." (Ratings by members of microteaching team).

Nineteenth Week of Project	Planning period for (1) developing "videotape bank," (2) designing format for formal report, and (3) formulating methods for disseminating project results.
Twentieth through Thirty-Second Week of Project	Operational period for (1) developing "videotape bank," (2) preparing formal report, and (3) beginning of dissemination of project results.

2. Description of Involvement Sequence

First Two Weeks of Project

Planning, Preparation and Orientation Period

a. Identifying the teachers and pupils for the project.

All teachers in the project were those who volunteered to participate. This did not force the inclusion of those teachers who might have felt threatened by participation in the project. Fifty-one teachers (seventeen from each of the three rural centers) -- approximately 25 percent of the total faculties -- participated.

The pupils in the project were those in grades 1-6 in the elementary school and those in grades 7-12 in the secondary school. Approximately 1,114 pupils, or about 19 percent of the total pupil population in the three centers were involved.

b. Locating the teaching stations.

The teaching stations were the participating teachers' classrooms (portable videotape equipment was used). Arrangements were made to cope with the inherent problems of lighting, acoustics, etc., so as to best provide a "non-studio" situation and to create the classroom atmosphere most conducive to appropriate pupil-teacher, pupil-pupil classroom interaction. Switcher faders and special effect units were available so that teacher and pupils could be observed in interaction situations.

c. Period for planning the time units for teaching, recording, playing-back, observing, analyzing, and interpreting.

The instructional time units for each videotaped instructional period were approximately 25 minutes. The class sizes averaged 23 pupils depending on the subject matter disciplines. These class sizes ranged from 20 to 26 pupils.

The recording aspects of the project were planned and operated in such a way as to include both teacher and pupil participation. Since the main thrust of this project was on improving teaching performance, a related purpose was the nature of pupil responses within a pupil-teacher interaction climate.

d. Training the concerned personnel in the proper use of the microteaching equipment.

In order to insure the most effective use of the microteaching equipment, a portion of the first two weeks of the project was given to preparing all the personnel concerned (the teacher, the technician, etc.) in the proper use of this equipment.

e. Acquainting members of the microteaching teams, members of the special team for observing and rating videotaped instructional performance of project teachers, and the participating teachers with proper use of rating instruments.

The microteaching team. (One team in each of three rural centers). The members of the microteaching team were given an intensified training period in the proper use of the two rating instruments with which they would be concerned as raters -- *The Stanford Teacher Competence Appraisal Guide* and the *Ryans' Classroom Observation Record*. The members of each rural center's microteaching team were:

(1) the project teacher
(2) a trusted colleague of the teacher
(3) the school principal
(4) an instructional supervisor
(5) a representative from the teacher education division of each of the cooperating institutions of higher learning
(6) the appropriate representative from the state department of education.

The special team for observing and rating videotaped instructional performance of project teachers. (One team to serve three rural centers). The members of this team received the same training as the members of the microteaching teams in the proper use of the Stanford Teacher Competence Appraisal Guide and the Ryans' Classroom Observation Record.

The members of this team were:

(1) a member of the teacher education division at Emory University, Atlanta, Georgia

(2) a member of the teacher education division at Atlanta University, Atlanta, Georgia

(3) an instructional supervisor in the DeKalb County, Georgia school system

(4) a school principal in the Atlanta public school system

(5) the superintendent of the Cobb County, Georgia public school system.

The function of this team was to pre-rate (prior to the "laboratory" teaching period) the videotaped performances of a random sample of the project teachers and to post-rate (following the "laboratory" period) the instructional performance of these same teachers.

The participating teachers. The appropriate directions and orientation were given to participating teachers relative to filling out the Minnesota Teacher Attitude Inventory.

Third Week of Project

Period for Pre-rating Project Teachers' Actual Classroom Instructional Performance

During this period, the microteaching teams (minus the project teachers and the colleagues) observed, analyzed, interpreted, and rated the performance of the project teachers prior to the teachers taping instructional performance.

The following instruments were utilized in the "pre-ratings," and also in the "post-rating," process:

a. The Stanford Teacher Competency Appraisal Guide.[17]

This instrument was used to rate general teacher competence.

The Stanford Teacher Competency Appraisal Guide consists of a seventeen item, seven-interval, forced choice scale based toward superior ratings to eliminate J-curve effects. Only the first thirteen of these seventeen items were utilized in this project. This appraisal guide has been subjected to much statistical study. The guide is the evolution of some seven years of Stanford experimentation with the revision of teaching competence scales. The thirteen semi-independent items were derived by means of a factor analysis of an appraisal guide composed of twenty-four items.

b. Classroom Observation Record.[18] (developed by Ryans)

This instrument was used to rate the two basic behaviors in the learning process -- pupil behavior and teacher behavior -- as they appear in a pupil-teacher interaction climate.

The Classroom Observation Record is a scale for rating teacher performance which incorporates eighteen teacher behavior dimensions, and four pupil behavior dimensions. The Classroom Observation Record has undergone a number of revisions in the evaluation of its development. The first form included forty dimensions of teacher behavior and six dimensions of pupil behavior. It was found to be unwieldy, to include closely overlapping dimensions, and to refer to certain behaviors that in practice observers had little or no opportunity to assess. Successive revisions and modifications resulted in the current Classroom Observation Record.

A complete Glossary which provides examples of the specific behaviors contributing to the polar descriptions of the first order dimensions was used with the Classroom Observation Guide.

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[17] Micro-Teaching: A Description. School of Education, Secondary Teacher Education Program, Stanford University, Summer, 1966, p. 3.

[18] David G. Ryans, Characteristics of Teachers. American Council on Education, Washington, D. C. (Third Printing), February, 1965, pp. 71-135.

c. Minnesota Teacher Attitude Inventory.[19]

This instrument was used to determine the attitudes which will predict how well the teacher will get along with the pupils. The fifty-one teachers were given the appropriate directions as to how to use this instrument.

The Minnesota Teacher Attitude Inventory consists of 150 opinion statements to be marked "strongly agree," "agree," etc. The instrument is designed to predict which teachers will establish good relations with pupils. A large number of the items in the inventory together with other similar items were given to teachers rated by their principals as successful or unsuccessful in terms of pupil-teacher relations. From these results, the final scale of 150 opinion statements was developed. Two studies of the validity of the inventory yielded correlation coefficients of .46 and .60 between the scores on the test and the three criteria utilized -- principals' estimate, pupils' rating, and visiting experts' ratings.

Fourth Week of the Project

a. A teaching and recording session.

The teacher was in charge of the entire teaching and recording arrangement. The videotaping was done by a technician using mobile equipment in the specially selected space. The teacher informed the technician when to start taping, where each of the cameras was to be spotted, and what he wished to emphasize during the taping. No other person other than the teacher, the technician, and the pupils was present during the videotaping. Two cameras were used -- one focused on the teacher, the other focused on the pupils.

b. A play-back session for the teacher alone.

As the sequence was planned the teacher was the first to view the videotape alone and privately. In those cases where the teacher felt this was not a fair recording of his performance, the tape was erased and another prepared. Taped recordings of the teacher's performance were made until one was produced which was satisfactory to the teacher.

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[19] Mental Measurements Yearbook. (Fourth Edition). Highland Park, New Jersey, The Gryphon Press, 1965, pp. 797-799.

c. A play-back session for the teacher and a trusted colleague.

The teacher then invited a trusted colleague to view the videotape and discuss the performance with him. It was at this point that another repeat performance would be undertaken if the teacher wished to do so.

d. A play-back session for the teacher and the "microteaching" team.

Finally, the "microteaching" team viewed the recording and discussed the performance.

Pre-Rating Period for Videotaped Instructional Performance of Project Teachers

During this period, the members of the special team for observing and rating the videotaped instructional performance of the project teachers viewed and rated the first "approved" (by the teachers involved) videotaping of a random sample of teachers' instructional performance. They used the two rating instruments utilized by the microteaching team.

Next Twelve Weeks of the Project

The "Laboratory" Teaching Period

This was the period in which the teacher utilized the knowledge about his strengths and weaknesses in teaching performance as revealed to him by the videotape and the discussion with the microteaching team. He had available at all times the videotape of his performance for replay if he so desired, and the report of his discussion period with the microteaching team. He also had available the consultative services of the members of the microteaching team as well as other consultative services relative to teaching.

Seventeenth Week of the Project

Second "Microteaching Treatment" Period

The same detailed operational sequence as employed in the first "microteaching treatment" period was utilized.

Post-Rating Period for Videotaped Instructional Performance of Project Teachers

During this period, the members of the special team for observing and rating the videotaped instructional performance of the project teachers viewed and rated the second "approved" (by the teachers involved) videotaping of the instructional performance of the teachers who had been pre-rated.

Change in teaching behavior as per videotapes of the teachers' instructional performance was determined by comparing pre- and post-ratings.

Eighteenth Week of the Project

Period for "Post-rating" Teachers' Actual Classroom Instructional Performance

The microteaching team again observed, analyzed, interpreted, and rated the performance of the project teachers using the same rating instruments as in the "pre-rating" period. Change in teaching performance as per observance of the project teachers' actual classroom instructional performance was determined by comparing pre- and post-ratings.

3. A List of Special Equipment Necessary for the Project

Since the effectiveness of this project was so dependent on adequate and appropriate sight and sound recording, much time and thought went into the selection of this kind of equipment. The following types of special equipment was used in this project.

Type of Equipment	Purpose
Video Camera Ensemble (Two - one for focusing on teacher and one for focusing on pupils)	For videotaping (live action style) the classroom interaction involving teacher and pupils

Videocorder Ensemble (With receiver and monitor)	For playing back the videotape recording of a classroom "microteaching" arrangement
Videotapes (Interchangeable type)	For containing videotaped classroom pupil-teacher interaction
Zoom Lens	For modifying range of videotaped area
Extension Cables	For permitting video room range of camera, monitor, and microphone
Switcher	To facilitate simultaneous operation of camera focused on teacher and camera focused on pupils.

CHAPTER IV

RESULTS

The results of this project are described in two sections: 1) Methodology Utilized in Analyzing and Interpreting the Data, and 2) Findings of the Project.

1. Methodology Utilized in Analyzing and Interpreting the Data

Pre- and post-ratings of (1) the project teacher's actual classroom instructional performance, (2) the videotapes of the project teachers instructional performance, and (3) the project teachers' attitude towards teaching provided the measurable data by which change in teaching performance and change in teacher attitude were determined.

The statistical techniques utilized were linear correlation analysis, variance analysis, and canonical correlation analysis.

Significance of differences in pre- and post-ratings of instructional performance was ascertained by determining whether or not the null hypothesis that there is no difference had been rejected.

2. Findings of the Project

A. Analysis of Pre-Rating Data

1. Rater Reliability

In a project of this kind, rater reliability is an important concern. To determine the reliability of the raters' judgments, the raters were compared for each rating instrument and within each rural center to ascertain how well the five raters in a center agreed about a given behavior.

Actual Classroom Teaching Behavior -- Pre-Ratings. As Table II depicts, the rater reliability for Rural Centers A and B was high and significantly greater than zero, as indicated by positive correlation coefficients of .78 (Ryans' COR-Pupil Behavior), .78 (Ryans' COR-Teacher Behavior), and .69 (Stanford TCAG) for Rural Center A, and by positive correlation coefficients of

.89 (Ryans' COR-Pupil Behavior), .90 (Ryans' COR-Teacher Behavior) and .90 (Stanford TCAG) for Rural Center B. Raters in Rural Center C did not reach good agreement as the correlation indices for these data reveal.

TABLE II

Rater Reliability As Indicated By
Correlation Coefficients
(Actual Teaching Performance)

Area	Ryans COR[22]		Stanford[25] TCAG
	Pupil Behavior[23]	Teacher Behavior[24]	
Center A	.78	.78	.69
Center B	.89	.90	.90
Center C	.11	.45	.33

Videotapes of Classroom Teaching Performance -- Pre-Ratings. Table III reveals that for all centers combined (which includes data from 15 teachers -- 5 from each center), the five raters agreed well on all rating instruments. The positive coefficient correlations of .84 (Ryans' COR-Pupil Behavior), .86 (Ryans' COR-Teacher Behavior), and .82 (Stanford TCAG) were all significantly greater than zero.

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[22] Ryans' Classroom Observation Record.

[23] The Pupil Behavior sector in the Ryans' COR which indicates how pupils react in terms of certain personal-social behaviors.

[24] The Teacher Behavior sector in the Ryans' COR which indicates how teachers instruct in terms of certain personal-social behaviors.

[25] The Stanford Teacher Competence Appraisal Guide.

TABLE III

Rater Reliability As Indicated By
Correlation Coefficients
(Videotapes of Classroom Teaching Performance)

Area	Ryans' COR		Stanford TCAG
	Pupil Behavior	Teacher Behavior	
All Centers	.84	.86	.82

2. Correlations Among All Rating Instruments

Actual Classroom Teaching Performance -- Pre-Ratings. A look at Table IV portrays that there were positive and significant correlations of .78 and .72 respectively (1) between Ryans' COR-Pupil Behavior and Ryans' COR-Teacher Behavior and (2) between Ryans' COR-Pupil Behavior and

TABLE IV

Correlations Among All Rating Instruments --
Data on 51 Teachers
(Actual Classroom Teaching Performance

Rating Instrument	Pupil Behavior	Teacher Behavior	Stanford TCAG	Minnesota TAI[26]
Ryans' COR-Pupil Behavior	1.00	-	-	-
Ryans' COR-Teacher Behavior	.78	1.00	-	-
Stanford TCAG	.72	.83	1.00	-
Minnesota TAI	.16	.20	.08	1.00

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[26] Minnesota Teacher Attitude Inventory.

The Stanford TCAG, and a positive, significant correlation of .83 between Ryans' COR-Teacher Behavior and The Stanford TCAG. On the contrary, the respective correlation coefficients of .16, .20, and .08 between (1) The Minnesota TAI and Ryans' COR-Pupil Behavior, (2) The Minnesota TAI and Ryans' COR-Teacher Behavior, and (3) The Minnesota TAI and the Stanford-TCAG indicate that teacher attitude did not correlate significantly with classroom teaching performance.

Videotapes of Classroom Teaching Performance -- Pre-Ratings. Similar to the correlation indices for all the rating instruments in terms of actual classroom teaching performance, the respective correlation coefficients of .97, and .90 between (1) Ryans' COR-Pupil Behavior and Ryans' COR-Teacher Behavior, and (2) Ryans' COR-Pupil Behavior and The Stanford-TCAG and the correlation coefficient of .90 between Ryans' COR-Teacher Behavior and The Stanford-TCAG, as shown in Table V, indicate that there were positive significant correlations in terms of the videotapes of classroom teaching performance between the Ryans' and the

TABLE V

Correlations Among All Rating Instruments --
Data on 15 Teachers
(Videotâpes of Clssroom Teaching Performance)

Rating Instrument	Ryans' COR-Pupil Behavior	Ryans' COR-Teacher Behavior	Stanford TCAG	Minnesota TAI
Ryans' COR-Pupil Behavior	1.00	-	-	-
Ryans' COR-Teacher Behavior	.97	1.00	-	-
Stanford TCAG	.90	.90	1.00	-
Minnesota TAI	.20	.20	.26	1.00

Stanford rating instruments. Again, as in the case of actual classroom teaching performance, when pre-test data of videotapes of classroom teaching performance were analyzed, teacher attitude did not correlate significantly with classroom teaching performance as evidenced by the correlation coefficients of .16, .20, and .07 between (1) The Minnesota-TAI and Ryans' COR-Pupil Behavior, (2) The Minnesota-TAI and Ryans' COR-Teacher Behavior, and (3) The Minnesota-TAI and The Stanford-TCAG.

3. Variance Analysis F-Ratios: Comparison of Actual and Videotape Teaching Performance -- Pre-Ratings (Re: Three Rating Instruments)

Table VI reveals the computed F-ratios for the variance analysis of how ratings of actual and videotape teaching performance compared in terms of Ryans'

TABLE VI

Variance Analysis F-Ratios: Comparison of Actual and Videotaped Classroom Teaching Performance Rating

Rating Instrument Comparisons	df	SS	MS	F	Significant at .05 Level
Ryans' COR-Pupil Behavior					
A. Center	2	0.4160	0.2080	.195	NO
B. Actual vs Videotape	1	0.0003	0.0003	.001	NO
A.B. Interaction[27]	2	0.7787	0.3893	1.310	NO
Ryans' COR-Teacher Behavior					
A. Center	2	1.2667	0.6333	.998	NO
B. Actual vs Videotape	1	0.0120	0.0120	.038	NO
A.B. Interaction	2	0.2480	0.1240	.392	NO
Stanford-TCAG					
A. Center	2	2.4087	1.2043	2.664	NO
B. Actual vs Videotape	1	0.0013	0.0013	.003	NO
A.B. Interaction	2	0.1127	0.0563	.153	NO

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[27] A.B. Interaction -- this is an indication of interaction between microteaching experience and the rural centers. For example, a significant F-ratio in A.B. Interaction (Ryans' COR-Pupil Behavior) would have indicated that one rural center exceeded one or two rural centers in differences between actual and videotaped classroom teaching performance.

COR-Pupil Behavior, Ryans' COR-Teacher Behavior, and The Stanford TCAG. All ascertained F-ratios were sufficiently low to indicate that actual and videotaped classroom teaching versions of pre-exposure behavior did not differ significantly (1) in terms of Ryans' COR-Pupil Behavior, Ryans' COR-Teacher Behavior, and The Stanford TCAG, (2) in terms of the rural centers themselves, and (3) in terms of an interaction of microteaching experience and the rural center.

B. Analysis of Post-Rating Data

1. Correlations Among All Rating Instruments -- Actual Classroom Teaching Performance (Post-Ratings).

In the analysis of post-ratings of actual classroom teaching performance, as in the pre-ratings, respective high and significant correlations of .82 and .77 were obtained between (1) Ryans' COR-Pupil Behavior and Ryans' COR-Teacher Behavior and (2) Ryans' COR-Teacher Behavior and The Stanford-TCAG. Likewise, a positive significant correlation of .82 was ascertained between Ryans' COR-Teacher Behavior and The Stanford-TCAG. Like in the pre-ratings in this area, the respective correlation of .10,

TABLE VII

Correlations Among All Rating Instruments — Data on 51 Teachers (Actual Classroom Teaching Performance)

Rating Instrument	Ryans' COR-Pupil Behavior	Ryans' COR-Teacher Behavior	Stanford TCAG	Minnesota TAI
Ryans' COR-Pupil Behavior	1.00	-	-	-
Ryans' COR-Teacher Behavior	.82	1.00	-	-
Stanford TCAG	.77	.82	1.00	-
Minnesota TAI	.10	.15	.19	1.00

.15, and .19 between (1) The Minnesota TAI and Ryans' COR-Pupil Behavior, (2) The Minnesota TAI and Ryans' COR-Teacher Behavior, and (3) The Minnesota TAI and the Stanford-TCAG indicate that teacher attitude and classroom teaching performance did not correlate significantly. This is shown in Table VII.

Videotapes of Classroom Teaching Performance. As per Table VIII, positive and significantly high coefficient of .93 and .93 respectively were obtained (1) between Ryans' COR-Pupil Behavior and Ryans' COR-Teacher Behavior, (2) between Ryans' COR-Pupil Behavior and The Stanford TCAG, as Table VII reveals. A positive and significantly high correlation of .94 was also obtained between Ryans' COR-Teacher Behavior and The Stanford TCAG.

TABLE VIII

Correlations Among All Rating Instruments --
Data from 13 Teachers
(Videotapes of Classroom Teaching Performance

Rating Instrument	Ryans' COR-Pupil Behavior	Ryans' COR-Teacher Behavior	Stanford TCAG	Minnesota TAI
Ryans' COR-Pupil Behavior	1.00	-	-	-
Ryans' COR-Teacher Behavior	.93	1.00	-	-
Stanford TCAG	.93	.94	1.00	-
Minnesota TAI	.45	.49	.58	1.00

The Minnesota TAI and The Stanford TCAG had a significant correlation of .58. The Minnesota TAI also approached significance in its correlation with Ryans' COR-Pupil Behavior (.45) and with Ryans' COR-Teacher Behavior (.49). It was interesting to note the significant correlation of teacher attitude with teacher performance as reflected in the Minnesota TAI-Stanford TCAG correlation of .58 and to see teaching attitude approach correlation significance with teaching performance in two other instances -- (Minnesota TAI-Ryans' COR-Pupil Behavior, and Minnesota TAI-Ryans' COR-Teacher Behavior). It is not clear why this occurs for ratings of videotaped classroom teaching performance and not for actual classroom teaching performance.

2. Variance Analysis F-Ratios: Comparison of Actual and Videotape Teaching Performance -- Post-Ratings (Re: Three Rating Instruments)

Table IX reveals that all F-ratios computed relative to comparison of actual and videotaped classroom teaching performance (Ryans' COR-Pupil Behavior, Ryans' COR-Teacher Behavior, and Stanford TCAG) were highly significant. An analysis of these highly significant correlations indicates the following:

   a. Ryans' COR-Pupil Behavior. Actual classroom teaching raters rated pupil reaction significantly higher than did raters of videotapes of classroom teaching. This was not true in the pre-rating data for this area.

TABLE IX

Variance Analysis F-Ratios: Comparison of Actual and Videotaped Classroom Teaching Performance Ratings

Rating Instrument Comparisons	df	SS	MS	F	Significant at .05 Level
Ryans' COR-Pupil Behavior					
A. Center	2	2.0527	1.0263	1.647	NO
B. Actual vs Videotape	1	7.5000	7.5000	22.321	YES
A.B. Interaction	2	0.2940	0.1470	.438	NO
Ryans' COR-Teacher Behavior					
A. Center	2	3.1340	1.5670	2.086	NO
B. Actual vs Videotape	1	5.6334	5.6334	20.786	YES
A.B. Interaction	2	0.9446	0.4723	1.742	NO
Stanford TCAG					
A. Center	2	5.5500	2.7750	3.276	NO
B. Actual vs Videotape	1	17.1764	17.1760	116.054	YES
A.B. Interaction	2	1.2886	0.6443	4.351	NO

b. Ryans' COR-Teacher Behavior. Again, the actual classroom teaching raters gave teachers better ratings than did raters of videotapes of teaching performance. This too did not occur in the pre-rating data.

c. Stanford TCAG. Similar to the Ryans' sectors, the raters of actual classroom teaching performance gave higher ratings than did the raters of the videotapes of classroom teaching performance. This was not apparent in these pre-rating data.

There were no significant F-ratios in the A (Rural Centers) and A.B. (Interaction) levels in any of the three rating instrument comparisons.

C. Changes in Teaching Behavior as Related to Microteaching Experience (Comparison of Pre- and Post-Ratings)

A major question which this project sought to answer was: "Does the rural school teacher's opportunity to see and hear his performance in the classroom, as presented on videotape, have an effect on his classroom instructional behavior?" An analysis of the difference in pre- and post-ratings of actual classroom teaching performance and videotapes of classroom teaching performance was utilized in an attempt to provide evidence for an answer or answers to this question. This analysis included the following four areas of instructional behavior insofar as actual classroom teaching performance is concerned:

1. Pupil Interaction as reflected in Ryans' COR-Pupil Behavior ratings
2. Teacher Interaction as reflected in Ryans' COR-Teacher Behavior ratings
3. Teacher Competence as reflected in The Stanford TCAG ratings
4. Teacher Attitude as reflected in the Minnesota TAI ratings

The first three of the above four areas were utilized in the analysis of instructional behavior change as evidenced by ratings of videotapes of classroom teaching performance.

1. Actual Classroom Teaching Performance
(Comparison of Pre- and Post-Ratings)

Ryans' COR-Pupil Behavior. A perusal of Table X reveals the following significant effects as evidenced by improvement in instructional performance from pre- to post-rating:

TABLE X

Variance Analysis F-Ratios: Comparison of Pre- and Post-Ratings of Actual Classroom Teaching Performance

Rating Instrument Comparisons	df	SS	MS	F	Significant at .05 Level
Ryans' COR-Pupil Behavior					
A. Center	2	5.9312	2.9656	6.995	YES
B. Pre- and Post	1	5.5588	5.5588	4.767	YES
A.B. Interaction	2	1.0279	0.5139	4.393	YES
Ryans' COR-Teacher Behavior					
A. Center	2	8.0965	4.0482	9.370	YES
B. Pre- and Post	1	5.5736	5.5736	51.895	YES
A.B. Interaction	2	0.1095	0.0547	.514	NO
Stanford TCAG					
A. Center	2	13.9842	6.9921	14.876	YES
B. Pre- and Post	1	6.9341	6.9341	46.537	YES
A.B. Interaction	2	0.0953	0.0477	.322	NO
Minnesota TAI					
A. Center	2	774.1370	387.0684	0.309	NO
B. Pre- and Post	1	523.8832	523.8832	68.989	YES
A.B. Interaction	2	380.1250	190.0625	2.51	NO

a. The rural centers differed. The Pupil reaction component of teaching behavior (Ryans' COR-Pupil Behavior) had a significantly higher improvement in Rural Center A than in Rural Center B as shown by the significant F-ratio of 6.995. There were no other rural center differences.

b. Improvement in the Pupil reaction component of teaching behavior (Ryans' COR-Pupil Behavior) was very great as evidenced by a computed F-ratio of 47.674 which was highly significant.

c. There was evidence of significant interaction of microteaching experience and the rural centers. The significant F-ratio of 4.393 attests to this. This interaction is attributable to the fact that there is a greater difference in pupil reaction ratings between Rural Centers A and B after microteaching experience than before.

Ryans' COR-Teacher Behavior. Table X supplies the evidence that there were the following two significant effects in this teacher reaction component of instructional behavior:

a. The rural centers differed. The teacher reaction component of instructional behavior (Ryans' COR-Teacher Behavior) had a significantly higher improvement in Rural Center A than Rural Center B, as indicated by the F-ratio of 9.37. No other rural center differences were found.

b. Improvement in the teacher reaction component of instructional behavior (Ryans' COR-Teacher Behavior) was very great as attested to by the large and significant F-ratio of 51.895.

c. The .514 F-ratio for microteaching experience-rural center interaction was too slight to be significant.

Stanford TCAG. A continued look at Table X reveals the following two significant effects in this area:

a. The rural centers differed. The significant F-ratio of 14.876 attests to this. Rural Centers A and C were both higher in this rating than Rural Center B.

b. Improvement in Teaching performance as reflected in the Stanford TCAG was very great, as evidenced by the F-ratio of 46.537.

Minnesota TAI. Again looking at Table X, it is found that one, but a very important one, effect resulted, and that was a highly significant improvement in teacher attitude as a function of the microteaching experience. The exceptionally high F-ratio of 68.989 indicated an equally high degree of significance. This would seem to suggest that viewing ones teaching performance on videotape tends to improve one's attitude toward teaching.

2. Videotapes of Classroom Teaching Performance (Comparison of Pre- and Post-Ratings)

In examining Table XI, it is interesting to note that there is evidence of the following three significant effects of the microteaching experience on instructional performance as this instructional performance is indicated in the Stanford TCAG:

a. Ryans' COR-Pupil Behavior. The microteaching experience improved the pupil component of teaching behavior, as shown by an F-Ratio of 10.509, which is highly significant.

b. Ryans' COR-Teacher Behavior. The microteaching experience improved the teacher component of teaching behavior. This is attested to by a significant F-Ratio of 7.642.

c. Stanford TCAG. The microteaching experience improved teaching behavior as reflected in teaching competence, as indicated by a significant F-Ratio of 7.642.

TABLE XI

Variance Analysis F-Ratios: Comparison of Pre- and Post-Ratings of Videotapes of Classroom Teaching Performance

Teaching Behavior Areas and Levels of Variance	df	SS	MS	F	Significant at .05 Level
Ryans' COR-Pupil Behavior					
A. Center	2	1.3140	0.6570	.484	NO
B. Pre- and Post	1	1.7763	1.7763	10.509	YES
A.B. Interaction	2	0.2447	0.1223	.720	NO
Ryans' COR-Teacher Behavior					
A. Center	2	1.5287	0.7643	.834	NO
B. Pre- and Post	1	1.4520	1.4520	7.642	YES
A.B.	2	0.0860	0.0430	.226	NO
Stanford TCAG					
A. Center	2	1.5327	0.7663	.747	NO
B. Pre- and Post	1	0.7680	0.7680	6.300	YES
A.B. Interaction	2	0.0020	0.0010	.008	NO

It is interesting to note that the ratings of videotapes teaching performance did not reveal any rural center differences in contrast to the ratings of actual classroom teaching performance. This could be due to different raters in each center for actual classroom teaching performance as contrasted with the same raters for videotapes of teaching performance.

Summarizing, Tables X and XI, both sets of data clearly indicate that the microteaching treatment had a significant improvement effect on the instructional behavior of the participating teachers.

D. Relationship of the Variables of Sex of Teachers, Level of Teaching Position (Elementary or Secondary), and Length of Teaching Service to Improvement in Teaching Performance

As Table XII indicates, twelve "t" tests were administered to ascertain whether or not the two groups considered each time differed in the amount in which they improved from pre-rating to post-rating. The computed "t" scores were sufficiently low to clearly indicate that there was no significant difference in any of the variables tested (sex of teachers, level of teaching and length of service) in the amount these variables affected the improvement in teaching performance.

E. Canonical Correlation Analysis

Canonical correlation according to Cooley and Lohnes,[28] is "the maximum correlation between linear functions of two sets of variables. Several linear combinations of the two sets are frequently possible. Each pair of functions is so determined as to maximize the correlation between the new pair of canonical variates subject to the restriction that they be independent of previously derived linear combinations."

As a part of the statistical design for this project, canonical correlations were computed in order to answer the following two basic questions:

1. Are the pre-ratings of classroom teaching measures significantly related to the post-ratings of classroom teaching measures?
2. In what ways may the two sets of data be combined to make the correlation between components of the two sets a maximum?

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[28] William W. Cooley and P. R. Lohner, Multi-Variate Procedures for the Behavioral Sciences. New York: John Wiley and Company, 1962. p. 35.

TABLE XII

Twelve "t" Tests Computed to Ascertain Any Significant Difference in Mean Rating Improvement of Teaching Performance in Terms of Variables of Sex of Teachers, Level of Teaching, and Length of Teaching Service

Teaching Behavior Area	Variable Tested		N	Mean Rating Improvement	Computed "t"	Needed "t" for Significance	Significant At .05 Level
Ryans' COR-Pupil Behavior Total N = 51	Sex:	Male Female	9 42	1.45 1.46	$t \simeq 0$	2.02	NO
	Level of Teaching:	Elem. Sec.	25 26	1.50 1.44	$t \simeq 0$	2.02	NO
	Length of Service:	5 Yrs. & Under Over 5 Yrs.	23 28	1.50 1.50	$t = 0$	2.02	NO
Ryans' COR-Teacher Behavior Total N = 51	Sex:	Male Female	9 42	2.30 1.53	$t = 0.392$	2.02	NO
	Level of Teaching:	Elem. Sec.	25 26	1.50 1.49	$t \simeq 0$	2.02	NO
	Length of Service:	5 Yrs. & Under Over 5 Yrs.	23 28	1.60 1.50	$t \simeq 0$	2.02	NO

Teaching Behavior Area	Variable Tested		N	Mean Rating Improvement	Computed "t"	Needed "t" for Significance	Significant At .05 Level
Stanford TCAG Total N = 51	Sex:	Male Female	9 42	1.40 1.71	t = 1.772	2.02	NO
	Level of Teaching:	Elem. Sec.	25 26	0.80 0.08	t = 0.870	2.02	NO
	Length of Service:	5 Yrs. & Under Over 5 Years	23 28	1.80 1.60	t = 1.195	2.02	NO
Minnesota TAI Total N = 51	Sex:	Male Female	9 42	12.11 14.34	t = 0.411	2.02	NO
	Level of Teaching:	Elem. Sec.	25 26	15.00 12.81	t = 0.702	2.02	NO
	Length of Service:	5 Yrs. & Under Over 5 Yrs.	23 28	13.73 16.46	t = 0.624	2.02	NO

The first canonical correlation was computed on the pre- and post-ratings of actual classroom teaching performance and involved all 51 teachers in the project, as is shown in Table XIII.

TABLE XIII

Tests of the Significance of Canonical Correlations for Pre- and Post-Ratings of Actual Classroom Teaching Performance (N = 51)

Canonical R	X^2	NDF (Degrees of Freedom)	Significant At .05 Level
.883	113.00	16	YES
.754	42.59	9	YES
.272	4.37	4	NO
.130	0.79	1	NO

Again looking at Table XIII, of the four possible correlations, only the first two were significantly greater than zero. This means that there were only two ways of combining components of the pre- and post-data to yield a significant correlation between the two sets of data (X^2 test computed according to Cooley's and Lohnes' statistical design).[29]

The contributions the individual variables make to the significant correlations are presented in Table **XIV.** It is observed in this table that teacher attitude contributes the most weight to both the pre- and post-rating linear combinations. Next in sequence are the Stanford TCAG for pre-ratings and the Ryans' COR-Teacher Behavior for post-ratings. The other variables have extremely small weights. Thus, both teacher attitude and teacher performance contribute to the linear equations which maximize the correlation between pre- and post-ratings. It is not clear why the Stanford TCAG contributes most to the pre-ratings while Ryans' COR-Teacher Behavior is weighted more on the post-ratings. It was quite interesting to note that the pupil reaction sector of the

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[29] Ibid., pp. 35-45.

Ryans' Classroom Observation Record contributed the least of all the variables to the canonical correlation. This could be saying that the teachers in this project were concerned more with what they said to pupils in the teaching process and how they as teachers directed these pupils' learning behavior rather than how these pupils responded to the teachers' instruction. This could also be the result of lower ceiling effect. Pupil reaction in the pupil-teacher interaction aspect of teaching behavior in classrooms receiving higher scores on the pre-test had less room to improve than classrooms with initially low scores.

TABLE XIV

Coefficients for Each Pre- and Post-Rating
Providing the Highest Canonical Correlation
(N = 51)

Pre-Ratings of Actual Classroom Teaching Performance		Post-Ratings of Actual Classroom Teaching Performance	
Instrument	Canonical Correlation	Instrument	Canonical Correlation
Minnesota TAI	.977	Minnesota TAI	.976
Stanford TCAG	.146	Stanford TCAG	.007
Ryans' COR-Teacher Behavior	.017	Ryans' COR-Teacher Behavior	.187
Ryans' COR-Pupil Behavior	-.015	Ryans' COR-Pupil Behavior	-.116

The second highest and only other significant canonical correlation yielded the variable weights as presented in Table XV.

TABLE XV

Coefficients for Each Pre- and Post-Rating Producing the Second Highest Canonical Correlation

Pre-Ratings of Actual Classroom Teaching Performance		Post-Ratings of Actual Classroom Teaching Performance	
Instrument	Canonical Correlation	Instrument	Canonical Correlation
Minnesota TAI	0.267	Minnesota TAI	0.231
Ryans' COR-Pupil Behavior	-.017	Ryans' COR-Pupil Behavior	-.165
Ryans' COR-Teacher Behavior	-.330	Ryans' COR-Teacher Behavior	-.293
Stanford TCAG	-.690	Stanford TCAG	-.608

As Table XV depicts, only teacher attitude contributes positively to the canonical correlations. A very interesting observation is that the Stanford TCAG and the Ryans' COR-Teacher Behavior contribute negatively to the correlations.

The results of the canonical correlation computed on the videotapes of classroom teaching performance are shown in Table XVI. Thirteen teachers were involved in this analysis. Rating data relative to two teachers were not available.

TABLE XVI

Tests of the Significance of Canonical Correlations
for Pre- and Post-Ratings of Videotapes
of Classroom Teaching Performance
(N = 13)

Canonical R	X^2	NDF (Degrees of Freedom)	Significant At .05 Level
.902	17.36	16	NO
.491	2.75	9	NO
.212	0.40	4	NO
.023	0.00	1	NO

None of the correlations in Table XVI are significant. The small sample size probably contributed to this. Since the correlations were not significant variable weights were not examined.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

From the collection, analysis, and interpretation of the data in this project have emerged certain conclusions which are stated in the sections that follow.

Conclusions

1. Rural school teachers will participate willingly and enthusiastically in a professionally helpful in-service education program of the type utilized in this project when security risks related to employment retention are diminished. The oversupply of teachers in each of the three rural centers volunteering to participate in this microteaching experience and the enthusiasm displayed by those chosen to be used provide the evidence to support this conclusion.

2. Raters of both actual and videotaped classroom teaching performance tend to agree more than they tend to disagree -- inter- and intra-category wise -- when these raters are chosen from such professionally related categories as (1) school administrators, (2) school instructional supervisors, (3) college and university student teaching directors, and (4) supervisors and directors of instruction in state departments of education.

3. A sequential analysis of a rural school teacher's actual and videotaped instructional performance which begins with his own evaluation, proceeds to that of a trusted colleague, and culminates with an analysis by a team of his professional peers receives the willing and enthusiastic cooperation of this rural school teacher in efforts designed to improve his instructional behavior.

4. There are location differences in the improvement of instructional behavior of teachers when three rural centers from three different states participate in a microteaching project which focuses primarily on videotaping of classroom teaching performance.

5. A rural school teacher's opportunity to see and hear his performance in the classroom, as presented on videotape in such an arrangement as this project provided, has a highly significant improvement effect on

this teacher's instructional behavior. This improvement was sufficiently large to indicate an increase in the level of teaching performance from "below average" to "above average." This large degree of improvement in instructional behavior may be attributable to one or both of the following two conditions:

   a. Seeing and hearing one's teaching in the context of a videotaped, microteaching experience (possibly for the first time in one's life) may reveal such glaring weaknesses that the teacher vows that from that point on never again will he look so bad "even unto himself." Consequently, the motivation impulse begins to build up and the determination to improve could become such an obsession that like the "keyed-up" football player who runs as he never ran before, this teacher at the post-observation period may teach as he never taught before.

   b. Geographical isolation, limited school system funds, a preference for the "bright lights" of the urban environment on the part of most teachers -- all of these, and others, may operate singly or in combination to leave the rural areas with the remnants of the competent and an abundance of the inferior teachers. Thus, the "starting point" ascertained during the pre-rating period may be sufficiently low in terms of good teaching performance to create a high ceiling for improvement which inspires the teacher obsessed with the previously mentioned motivation impulse to progress at a rate that may sometimes seem to be greater than normal.

6. The variables of sex of teacher, level of teaching (elementary or secondary), and years of teaching experience (five years or less - more than five years) make no significant difference in the improvement of classroom teaching performance gained through a microteaching involvement such as the one utilized in this project.

7. The canonical correlation analysis of actual classroom teaching performance indicates that the microteaching experience affected pupil reaction behavior, teacher instructional behavior, and teacher attitude in slightly different ways.

   The low weight of pupil reaction behavior in the canonical correlation suggests that the improvement in ratings of this behavior attributable to microteaching also reflected changes in the positions of the ratings. This probably means that some of the ratings of observed pupil reaction behavior improved a great deal while others improved little or not at all.

   On the other hand, the high weighting of teacher instructional behavior and teacher attitude in the canonical correlation suggests that the improvement in ratings of these behaviors occurred relatively uniformly for all teachers. This seems to indicate that the observed rating position for each teacher remained about the same from pre- to post-microteaching observations.

8. For rural school systems, the utilization of some appropriate form of microteaching using videotape may be at least a partial solution to the problems these school districts experience in their efforts to improve teaching performance because of geographical isolation, limited funds, lack of adequate instructional supervisory personnel, and at times poorly qualified teachers. For if rural school teachers can be motivated towards autonomous improvement of instructional performance through a microteaching experience or some adaptation of it, the terrific salary burden imposed on a rural school system in the employment of instructional supervisory personnel to aid teachers in professional growth can be diminished.

9. While the data indicated clearly that the microteaching treatment utilized in this project resulted in significant improvement in the instructional behavior of the participating teachers, several negative elements in the project were noted. Among these were:

   a. Utilization of a rating arrangement for instructional behavior that included too many component skills of teaching performance.

   b. Use of videotape technician in the classroom during a taping session.

Recommendations

1. Microteaching, or some adaptation of it, when used in conjunction with videotaping has some yet unexplored ways in which it might be effectively utilized. For instance, school system employment officials could be furnished with videotapes of prospective teachers as they were involved in a laboratory teaching experience. This could furnish these school employment officials some knowledge about prospective teachers which written and oral correspondence, interviews, and personal recommendations can not provide. It is therefore recommended that some project or study be undertaken which would provide evidence as to the feasibility of utilizing microteaching in this wise.

2. A discernable limitation of this project was having the observers rate classroom teaching performance according to (1) general pupil-teacher classroom interaction (Ryans' Classroom Observation Record composed of 22 component items), and (2) general teaching competence (The Stanford Teacher Competence Appraisal Guide composed of 17 component items -- only 11 of which were considered relevant for this project). Obviously, trying to observe and rate such a large number of component aspects of classroom teaching behavior has its limits. It is therefore recommended that a microteaching project using videotaping, or an adaptation of such a project, be undertaken with rural school teachers, and that this project focus on improving a special component of instructional performance such as set induction, stimulus variation, etc.

3. Having a videotape technician in the teacher's classroom during a taping session, despite the many precautions taken to eliminate or reduce the negative effects of "another person" present during the taping session, is not in the best interest of the project. It is therefore recommended that microteaching projects, or adaptations of microteaching projects, utilizing videotape include the use of a remote console placed outside the classroom to control the operation of the videotape equipment needed in the classroom. The St. Cloud, Minnesota public scool system has had much success in utilizing the remote console arrangement.

CHAPTER VI

THE USE TO BE MADE OF FINDINGS OF THE PROJECT

Three related components of this project are dissemination, continuation, and exportability.

Dissemination

A very necessary component in any model, research, or demonstration educational program is the provision for dissemination. Some of the proposed avenues of dissemination for this project are these:

Agencies

The State Departments of Education through their personnel and communication media;

The three rural communities through their local radio stations, their newspapers, and their voice of their citizens;

The Southern Association of Colleges and Schools through its publications, conferences, etc.;

The National Federation for the Improvement of Rural Education (NFIRE).

Videotapes

The videotapes produced as a result of the microteaching project will be available to those who desire same on a local, regional, state, and national basis. The only cost for borrowing tapes will be a small charge for packing and mailing.

Visitations

Visitations will be invited and encouraged, and personnel, materials, and equipment will be available to visitors so as to make their visitation a profitable educational experience.

Conference

A short-term conference is planned to provide the opportunity for those who desire it to have the benefit of the rural centers' experience with microteaching.

Utilizing Professional Publications, Etc.

A series of articles will be produced which will be submitted to professional magazines and other organs for publications. Abstracts will be submitted to government agencies, such as ERIC-Clearinghouse on Rural Education and Small Schools, and other organizations which disseminate information.

Continuation and Exportability

The respective state departments of education in Tennessee, Florida, and Georgia (cooperating agencies in the rural center programs) are committed insofar as state and local funds will permit (1) to continue in these school systems the proven effective aspects of the project (including the microteaching component) when federal government and foundation support for these projects is no longer available, and (2) to export, transfer, and spread these proven effective aspects of the project to other school systems.

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APPENDICES

APPENDIX A

LETTERS OF ENDORSEMENT AND COMMITMENT FROM SCHOOL OFFICIALS OF THE THREE RURAL CENTERS

WHEELER COUNTY BOARD OF EDUCATION

WM. S. CLARK, SUPERINTENDENT
CARLINE B. COX, CLERK
ALAMO, GEORGIA

OFFICE PHONE 568-3041
RESIDENT PHONE 568-2451

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MRS. GWEN FLANDERS
EDUCATIONAL IMPROVEMENT PROJECT AND
CURRICULUM DIRECTOR
ALAMO, GEORGIA
MRS. RUTH BOND
GUIDANCE COORDINATOR AND
CURRICULUM DIRECTOR
ALAMO, GEORGIA
MRS. ANN B. WHITE
VISITING TEACHER
ALAMO, GEORGIA

November 8, 1968

Dr. John E. Codwell, Associate Director
Education Improvement Project
Southern Association of Colleges and Schools
Suite 592-795 Peachtree Street
Atlanta, Georgia 30308

Dear Dr. Codwell:

The Wheeler County Board of Education endorses the "Micro-Teaching" Project and is not only willing but also privileged to be a participant.

Sincerely yours,

Wm. S. Clark

William S. Clark, Supt.
Wheeler County Schools

Jim Webb
Rickman, Tenn.

Willie B. Phillips
Route 2, Hilham, Tenn.

Esby Burgess
Allons, Tenn.

Kenneth Arney, Chairman
Star Route, Livingston, Tenn.

Wynn F. Easterly D.V.M.
Route 5, Livingston, Tenn.

Largo Looper
Route 2, Monterey, Tenn.

Odus Taylor
Route 1, Allons, Tenn.

Department of Public Instruction

R. E. MOLES, SUPERINTENDENT
OVERTON COUNTY

LIVINGSTON, TENNESSEE 38570

November 14, 1968

Dr. John Codwell, Associate Director
Education Improvement Project
Southern Association of Colleges and Schools
Suite 592
795 Peachtree Street
Atlanta, Georgia 30308

Dear Dr. Codwell:

The Overton County Board of Education highly endorses the vitally needed "Micro-Teaching" project and we give full cooperation. We feel that this project will have a significant impact on the teaching performance.

If the Overton County System can be of further assistance, please feel free to call on us.

Sincerely,

Robert E Moles

Robert E. Moles, Supt.
Overton County Schools

Kenneth D Arney

Kenneth D. Arney, Chairman
Board of Education

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Wewahitchka Public Schools
Wewahitchka, Florida

November 19, 1968

OFFICE OF THE PRINCIPAL

Dr. John B. Codwell
Associate Director, E.I.P.
Southern Association of Colleges and Schools
795 Peachtree Street
Suite 592
Atlanta, Georgia 30308

Dear Dr. Codwell:

It is with great pleasure and an honored privilege to endorse the Micro-Teaching Project for the Wewahitchka Public School System.

We believe that this educational innovation will prove to be of great value in our desire for quality education.

Sincerely yours,

R Marion Craig

R. Marion Craig
Superintendent

Harrell E. Holloway

Harrell B. Holloway
Principal

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APPENDIX B

BRIEF DESCRIPTION OF RURAL EDUCATION IMPROVEMENT PROJECT

I. IDENTIFICATION OF PROJECT

The Rural Education Improvement Project sponsored by the Education Improvement Project of the Southern Association of Colleges and Schools is a consortium of educational institutions, organizations and agencies collaborating in an effort to improve the educational performance of disadvantaged pupils in rural areas from pre-school through high school. The project currently includes a program in one rural center in three states (Florida, Georgia and Tennessee). It is planned to establish such a program in a rural center in each of the other eight states in the SACS region –– Alabama, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.

II. PURPOSES OF PROJECT

The purposes of the rural education improvement project are:

a. To identify through appropriate vehicles of demonstration the relative effectiveness of a number of interventions designed to interrupt the vicious cycle of accumulated deficits in certain "learning" skills and in certain "learning to learn" skills which disadvantaged pupils in rural areas tend to manifest;

b. To demonstrate the inter-relatedness of the child-family-community-school complex by showing that as rural school youngsters improve their academic performance, parents, teachers, and lay citizens also improve their understanding of and empathy toward these children and the degree of disadvantage they manifest;

c. To demonstrate that when the research findings and theoretical concepts of college and university personnel are blended with the practical know-how of elementary and secondary school educators, the pupils affected reap a combination of benefits which neither university personnel nor public school educators working separately can provide.

III. EDUCATIONAL INSTITUTIONS, AGENCIES, AND ORGANIZATIONS PARTICIPATING IN THE PROJECT

As may be observed in Chart I, in two instances (Wheeler County, Georgia and Overton County, Tennessee), the project includes the total county public school system. In a third instance (Wewahitchka, Florida), the program is limited to serve one town in the county (Gulf) school system. Chart I also portrays the names and locations of all participating institutions, agencies, and organizations in the project.

CHART I

Sponsoring Agency	Rural Center School System	Cooperating Institutions and Organizations (Name and Location)
EDUCATION IMPROVEMENT PROJECT Southern Association of Colleges and Schools	OVERTON COUNTY, TENNESSEE	Tennessee State Dept. of Education Nashville, Tennessee
		Tennessee Technological State Univ. Cookeville, Tennessee
		Middle Tenn. State University Murfreesboro, Tennessee
	WEWAHITCHKA, FLORIDA	Florida State Dept. of Education Tallahassee, Florida
		Florida A & M State University Tallahassee, Florida
		Florida State University Tallahassee, Florida
		Gulf Coast Junior College Panama City, Florida
	WHEELER COUNTY, GEORGIA	Georgia State Dept. of Education Atlanta, Georgia
		Albany State College Albany, Georgia
		Georgia Southern College Statesboro, Georgia

CHART II

RURAL CENTER	Number of Pupils In The Program (1968-1969)			INTERVENTION COMPONENTS IN PROGRAM
	Boys	Girls	Total	
OVERTON COUNTY, TENNESSEE	1,937	1,754	3,691	1. Teacher Education (In-Service and Pre-Service) Including principals, supervisors, guidance counselors, classroom teachers, etc. 2. Communication Skills Development 3. Tool Technology and Integrated Industrial Arts 4. Family Involvement 5. Cultural Enrichment 6. School-Home-Community Agent Service 7. Non-Professional Staff Aide Service
WEWAHITCHKA, FLORIDA	436	377	813	1. Teacher Education (In-Service and Pre-Service 2. Communication Skills Development 3. Family Involvement 4. Cultural Enrichment 5. School-Home-Community Agent Service 6. Non-Professional Staff Aide Service
WHEELER COUNTY, GEORGIA	715	656	1,371	1. Teacher Education In-Service and Pre-Service 2. Communication Skills Development 3. Extended School Year Program 4. Continuous Progress in Learning 5. Integrated Industrial-Technical Education Program 6. Focus on "Learning to Learn" Program 7. Family Involvement 8. Cultural Enrichment 9. School-Home-Community Agent Service 10. Non-Professional Staff Aide Service
TOTAL	3,088	2,787	5,875	

V. DURATION OF PROJECT

This is a five year program starting with the fall semester of 1967-1968 and concluding with the second semester of the school year 1971-1972.

APPENDIX C

DEMOGRAPHIC DATA ABOUT THREE RURAL CENTERS

OVERTON COUNTY, TENNESSEE

Overton County is located in north central Tennessee on the northwestern edge of the Cumberland Plateau. Its 439 square miles are populated by 14,661 people (1960 census). Livingston, the county seat and largest center of population, had a 1960 population of 2,817. While the population of Livingston is increasing, the population of the county as a whole has showed a gradual decline over the past several decades. The people are mostly white, with a very small non-white population.

Overton County ranks 123 from the bottom among all counties in the United States in per capita income. The scanty rewards for those employed are congruent with this ranking. For instance, the median family income in 1960 was $2,019 with two-thirds earning less than $3,000. While this represented a great increase in income during the preceding decade, it is substantially less than half the median income for the country.

The median school grades completed by persons 25 and older in 1960 was 7.2 for males, 8.0 for females. In that same year the illiteracy rate for the county was 23.2 percent.

The level of preparation of teachers in the county system has improved considerably during the period from 1950 to 1965. In the former year 27 percent of the teachers held the bachelor's degree, 2.5 percent the master's degree. About 70 percent had less than four years of college. In 1965 only 21 percent had less than four years of college, 65 percent hold the bachelor's degree, and there were 14 percent with a master's degree. The difficulty in improving the level of preparation further can be gauged from the fact that the average teacher's salary in Overton County in 1965 was $3,962. The Tennessee State average in that year was $5,067.91.

Attempts have been made to improve the public education service in the county. In 1950 there were no fewer than 73 schools in the county, 52 of them one room, one teacher schools. In 1965-1966, there were only 12 schools, as the result of some consolidation. There are now no one room, one teacher schools in the county.

WEWAHITCHKA, FLORIDA

Wewahitchka,[1] formerly the county seat (1925-1968), is a small town in Gulf County near the northwest coast of Florida at the point where the panhandle begins. The current population of the county is approximately 9,500 of which somewhat more than a third (3,777) live in the Wewahitchka area. The Wewahitchka area is 14 percent non-white. However, the school population is 24 percent non-white. In 1960, 18 percent of the total population of Florida was non-white; 20 percent of the school population was non-white. Virtually all of the non-white population of Wewahitchka is Negro; about 90 percent of the state-wide non-white population is Negro.

Most of the population of the area, aside from a small professional group, has employment directly or indirectly related to the pulp and paper industry in Port St. Joe. Many of those in the Wewahitchka area are engaged in pulp wood cutting and hauling. Because of the irregular operation of some mills many are really only partially employed. A large number are supported by welfare. The average per capita income ($2,116) is slightly below the state average of $2,158. The median family income, however, is only 86 percent of the state-wide median. The average educational level in the county (7.5) is almost three and a half years below the Florida average (10.9).

The school population at the beginning of the school year 1967-1968 was 747, of which 406 were boys and 341 were girls. This represents an increase of over 13 percent since 1960. The drop-out rate is 5.1 percent at the present time. The average class size in the schools (25 in the elementary school and 26.5 in the secondary) exceeds the state average in secondary but is below the state average in the elementary grades. The chart of the level of teacher preparation shows that 80 percent of the teachers are at Rank III and 20 percent at Rank II. This is slightly higher than the state average. The average annual salary in Gulf County is $700 below the state average. Per pupil expenditure in the county has increased over 8 percent in the past four years. At $393.90 in 1964-1965 it is more than $11.00 over the Florida average. From the state comes 69.35 percent of the money, from local sources 29.47 percent and from Federal Government 1.18 percent.

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[1] The county seat has been moved to Port St. Joe, Florida.

Progress in Wewahitchka, especially as related to school construction, is commendable. A ground breaking ceremony for a new high school was held recently. The new school is scheduled to be completed in 365 calendar days.

WHEELER COUNTY, GEORGIA

Wheeler County is a typical rural county in South Central Georgia, the "piney woods" section. In population it ranks 145th in the 1959 counties. The largest centers of population are the county seat, Alamo, which had a 1960 population of 822, and Glenwood with 684.

The current population of the county is approximately 2/3 white and 1/3 Negro. This is a slightly higher population than is the case with the state as a whole.

The people of this rural county center their support on the schools and churches. These two institutions form the focal point of the social life of the county. There is an evident desire among the parents that the children have better educational opportunities and thereby increase their economic status.

The median family income in the county in 1959 was $2,270, slightly over half of the median family income for the entire state. This represents a slight increase over the previous decade, due in part to the increase in farm employment.

There are several small industrial plants in the county, most of which are wood product mills employing fewer than 20 workers.

The average level of education of the adult population is seventh grade; for the state it is the eighth grade.

The level of preparation of teachers of both races follows state wide averages closely. The teachers of both races hold four year certificates with several teachers holding fifth and sixth year certification.

APPENDIX D

RESULTS OF TWO PROJECTS SIMILAR TO THE ONE DESCRIBED IN THIS REPORT

The original idea and plan for microteaching included student teachers only. Recently teachers in service have also been a part of the microteaching project population. The two microteaching projects somewhat similar to the one herein reported are those conducted by the Unified School District in Orange, California, and the public school system in St. Cloud, Minnesota.

The Orange County, California project was designed to determine what effect an in-service education program which focused on the use of video taped recording of classroom behavior had on the instructional performance of teachers.

Two results of the Orange County project, similar to those reported in this project, were as follows:

1. Teachers participating in the Teacher Self-Appraisal In-Service Program improved significantly in their acceptance of the problems and values of their pupils, many of whom were disadvantaged It was interesting to note that School A teachers improved significantlly in their use of non-verbal encouraging categories where Schools B and C teachers changed significantly only in verbal encouraging areas.

2. The students of classroom teachers participating in the Teacher Self-Appraisal In-Service Program increased their knowledge of reading as determined by their scores on the Stanford Achievement Test.

The St. Cloud Minnesota videotape project had two basic parts. Part I was a planning period activity, the title of which was The Use of Video Tape in Inservice Training for the purpose of Improving Teaching. Part II was more of an operational program, the title of which was Self Confrontation by Means of Video Tape to Effect Behavior Modification of Teachers for the Purpose of Improving Instruction.

The general purpose of Part I was to plan and devise an operative program for Part II in which videotapes of classroom behavior would be used in an effort to improve instructional performance.

The general objectives of Part II were the following:

1. To involve teachers in a scientific process of teacher professional maturation as a means of upgrading instruction;

2. To provide for the classroom teachers a program unique in the media of videotape which would maximize and effectively use the potential of this media in improving the instructional performance of teachers.

The specific features of the project activities unique to this project which merited its being termed an innovative program were these:

1. Non-studio taping of routine classroom activities for subsequent teacher self-evaluation study;

2. Only teacher and pupils present during taping.

The detailed results of Part II of the St. Cloud project will be delineated in a doctoral thesis by Harry Wenner, a member of the administrative staff of the St. Cloud public school system. Cursory examination of the data suggests some significant information in the categories of imaginative classroom behavior on the part of teachers and in verbal understanding on the part of the students.